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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,604	01/28/2004	Haixiang Liang	14541US02	5206

23446 7590 10/13/2010

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EXAMINER	
CHEN, QING	

ART UNIT	PAPER NUMBER
2191	

MAIL DATE	DELIVERY MODE
10/13/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/767,604
Filing Date: January 28, 2004
Appellant(s): LIANG ET AL.

Philip Henry Sheridan (Reg. No. 59,918)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on September 15, 2010 appealing from the Office action mailed on April 19, 2010.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The Examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The Examiner agrees with the statement of the status of claims contained in the brief.

(4) Status of Amendments After Final

The Examiner agrees with the statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The Examiner agrees with the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The Examiner agrees with the statement of the grounds of rejection to be reviewed set forth in the brief.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,353,243	READ et al.	10-1994
6,467,052	KALER et al.	10-2002
6,823,004	ABDELILAH et al.	11-2004

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. **Claims 9-13 and 39-41** are rejected under 35 U.S.C. 102(e) as being anticipated by **US 6,823,004 (hereinafter "Abdelilah")**.

As per **Claim 9**, Abdelilah discloses:

- a first input that operates to receive information from a first device that is utilizing the modem device to communicate with a second device through a communication network *(see Column 7: 44-51, "The host system 300 is coupled to the modem 310 through a primary path 315 which supports communication services utilizing the modem 310. More particularly, communications from applications executed on the host system 300 are conveyed on the primary path 315 to the modem 310 for transmission through the port 320 which, in the illustrated embodiment, provides a connection to the Public Switched Telephone Network (PSTN).")*;

- a second input that operates to receive information from the second device through the communication network *(see Column 7: 51-55, "Similarly, communications from a remote device by a server modem (not shown) are received from the PSTN through port 320 and provided to a destination application executing on the host system 300 by the modem 310.")*; and

- a recording module processor communicatively coupled to the first input and the second input that operates to fully record input information arriving at one or both of the first input and the second input during real-time operation of the modem device for subsequent non-real-time analysis *(see Column 9: 66 and 67 to Column 10: 1-49, "... the teachings of the present invention are particularly directed to environments in which both a primary path and a secondary path are available to the DSP memory 345 to provide for monitoring operations to occur in real time while a communication connection is active through the modem. As is evident from the types of information identified above which may be monitored according to the present invention, a significant amount of performance information can be tracked during a communication connection, for example, on a minute-by-minute basis or responsive to detection of the occurrence of certain events. The monitoring system of the present invention may be utilized to monitor internal states of the modem 310 or state transitions of one or more state machines implemented within the modem 310 and to selectively record specified parameters out of the total set of parameters available within the DSP memory 345 during state conditions where the selected parameters are significant or of potential interest to a diagnostic user." and "Information may be collected on a real time basis and recorded during the life of a connection. Furthermore, information about disconnects may be gathered and throughput for a connection can be estimated. In addition, data may also be collected when a connection is being attempted,*

in other words, during the startup phases before a connection is in use for data communication." and "Furthermore, as performance information may be collected on a real-time basis during a connection, pertinent data may be preserved which might otherwise be lost as a result of an event causing diagnostic data in the DSP memory 345 to be overwritten (for example, during retrains). The performance data may be recorded while the user of the client modem 310 is actively connected to a remote server modem in a normal manner such as through a service provider end user application (e.g. AOL, IGN Dialer and Windows Dial-up Networking) executing on the host system 300. Performance data may be obtained throughout the active connection operations including both the startup phases and during data communication as well as the disconnect procedures.").

As per **Claim 10**, the rejection of **Claim 9** is incorporated; and Abdelilah further discloses:

- a command input that receives modem control commands from the first device, and wherein the recording module processor further causes commands arriving at the command input during real-time operation of the modem device to be fully recorded for subsequent non-real-time analysis *(see Column 9: 33-37, "Performance information so obtained may include a variety of information including ... call setup return codes (CSR CODE) such as those available on Microsoft Corporation's AT code #UD (UniModem diagnostic command specification) ...").*

As per **Claim 11**, the rejection of **Claim 9** is incorporated; and Abdelilah further discloses:

- wherein the first device is a personal computer, and wherein the recording module processor operates to cause the input information arriving at the first input from the personal computer and arriving at the second input from the second device through the communication network, during real-time operation of the modem device, to be fully recorded on a memory device of the personal computer *(see Figure 3: 300; Column 7: 51-55, "Similarly, communications from a remote device by a server modem (not shown) are received from the PSTN through port 320 and provided to a destination application executing on the host system 300 by the modem 310."; Column 8: 15-20, "The DSP memory 345 further includes one or more first-in first-out (FIFO) buffers 355, 360. The FIFO buffers 355, 360 implemented in the DSP memory 345 are used to record state transitions made for one or more of the state machines of the modem 310 as will be described further later herein.").*

As per **Claim 12**, the rejection of **Claim 9** is incorporated; and Abdelilah further discloses:

- wherein the recording module processor operates to cause input information arriving at the first input from the first device and arriving at the second input from the second device through the communication network to be communicated to a networked computer communicatively coupled to the modem device over the communication network and fully recorded on a memory device of the networked computer *(see Column 8: 53-62, "Accordingly, in preferred embodiments of the present invention, modem performance is monitored by a host system 300 containing an internal modem 310. Nonetheless, the benefits of the present invention may also be obtained in various other embodiments including those in which the secondary path*

335 does not return to the same host as the primary path 315. A second host may be co-located or remote from the first host. In fact, a remote second host could be at a distant location monitoring a modem connection through the secondary path 335.").

As per **Claim 13**, the rejection of **Claim 9** is incorporated; and Abdelilah further discloses:

- wherein the modem device comprises an ADSL modem *(see Column 7: 60-63, "Similarly, when connected with a broadband network, the modem 310 may be a cable modem, an Asymmetric Digital Subscriber Line (ADSL) ...").*

As per **Claim 39**, the rejection of **Claim 11** is incorporated; and Abdelilah further discloses:

- wherein the modem device operates to cause the input information to be fully recorded on the memory device of the personal computer by, at least in part, being driven as an operating system (OS) device driver of the personal computer to write the input information directly to a hard drive of the personal computer *(see Column 4: 20-24, "One known approach to evaluating modem performance is the use of AT commands, such as those provided for by operating systems, such as Windows™ from Microsoft Corporation, for communicating with a modem (such as the #UD command).").*

As per **Claim 40**, the rejection of **Claim 9** is incorporated; and Abdelilah further discloses:

- wherein the recording module processor is integrated into an integrated circuit of the modem device *(see Figure 3: 340, 345, 355, and 360)*.

As per **Claim 41**, the rejection of **Claim 9** is incorporated; and Abdelilah further discloses:

- wherein the recording module processor operates to cause the input information arriving at the first input and the second input during real-time operation of the modem device to be fully recorded in exactly the same sequence as the input information is received at the modem device *(see Column 8: 15-20, "The DSP memory 345 further includes one or more first-in first-out (FIFO) buffers 355, 360. The FIFO buffers 355, 360 implemented in the DSP memory 345 are used to record state transitions made for one or more of the state machines of the modem 310 as will be described further later herein." and 28-33, "... while the secondary path 335 through the bus interface 325 allows the host system 300 to access the DSP memory 345 to obtain data related to performance of the modem 310 during an active communication session supported by the primary path 315 to the modem 310.")*.

2. **Claims 19-38, 42-44, and 46** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Abdelilah** in view of **US 6,467,052 (hereinafter "Kaler")**.

As per **Claim 19**, Abdelilah discloses:

- a memory comprising input information recorded by a recording module residing on a modem, wherein the recording module fully records the input information received at the modem

during real-time operation of the modem *(see Column 9: 66 and 67 to Column 10: 1-49, "... the teachings of the present invention are particularly directed to environments in which both a primary path and a secondary path are available to the DSP memory 345 to provide for monitoring operations to occur in real time while a communication connection is active through the modem. As is evident from the types of information identified above which may be monitored according to the present invention, a significant amount of performance information can be tracked during a communication connection, for example, on a minute-by-minute basis or responsive to detection of the occurrence of certain events. The monitoring system of the present invention may be utilized to monitor internal states of the modem 310 or state transitions of one or more state machines implemented within the modem 310 and to selectively record specified parameters out of the total set of parameters available within the DSP memory 345 during state conditions where the selected parameters are significant or of potential interest to a diagnostic user." and "Information may be collected on a real time basis and recorded during the life of a connection. Furthermore, information about disconnects may be gathered and throughput for a connection can be estimated. In addition, data may also be collected when a connection is being attempted, in other words, during the startup phases before a connection is in use for data communication." and "Furthermore, as performance information may be collected on a real-time basis during a connection, pertinent data may be preserved which might otherwise be lost as a result of an event causing diagnostic data in the DSP memory 345 to be overwritten (for example, during retrains). The performance data may be recorded while the user of the client modem 310 is actively connected to a remote server modem in a normal manner such as through a service provider end user application (e.g. AOL, IGN Dialer and Windows Dial-up*

Networking) executing on the host system 300. Performance data may be obtained throughout the active connection operations including both the startup phases and during data communication as well as the disconnect procedures.").

However, Abdelilah does not disclose:

- a playback module communicatively coupled to the memory, the playback module comprising a model of the modem that the playback module executes according to the input information in the memory.

Kaler discloses:

- a playback module communicatively coupled to a memory, the playback module comprising a model of an application that the playback module executes according to input information in the memory *(see Figure 14; Column 33: 15-20, "FIG. 14 illustrates various user interface features of an animated application model in an exemplary embodiment of the invention. The user interface features are shown generally by reference number 400. In the UI depicted in FIG. 14, diagrams are portrayed of the different blocks representing varying levels of detail of a hierarchical model of the application.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to modify Abdelilah's invention to include a playback module communicatively coupled to the memory, the playback module comprising a model of the modem that the playback module executes according to the input information in the memory. Note that Kaler also discloses that the invention has utility in analyzing the performance of computer hardware *(see Column 3: 58-65).* The modification would be obvious because one of ordinary skill in the art would be motivated

to observe and isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-36)*.

As per **Claim 20**, the rejection of **Claim 19** is incorporated; and Abdelilah further discloses:

- information from a computer coupled to the modem *(see Column 7: 44-51, "The host system 300 is coupled to the modem 310 through a primary path 315 which supports communication services utilizing the modem 310.")*; and

- information from a device with which the computer was communicating through a communication network using the modem *(see Column 7: 51-55, "Similarly, communications from a remote device by a server modem (not shown) are received from the PSTN through port 320 and provided to a destination application executing on the host system 300 by the modem 310.")*.

As per **Claim 21**, the rejection of **Claim 19** is incorporated; and Abdelilah further discloses:

- wherein the input information comprises data and modem control commands sent from a computer to the modem *(see Column 9: 33-37, "Performance information so obtained may include a variety of information including ... call setup return codes (CSR CODE) such as those available on Microsoft Corporation's AT code #UD (UniModem diagnostic command specification) ...")*.

As per **Claim 22**, the rejection of **Claim 19** is incorporated; however, Abdelilah does not disclose:

- a debugging module communicatively coupled to the playback module that provides for controlling and observing the operation of the playback module.

Kaler discloses:

- a debugging module communicatively coupled to a playback module that provides for controlling and observing the operation of the playback module *(see Column 22: 50-67 to Column 23: 1-11, "Like any debugging tool, the VSA should ensure that the debuggability of the system cannot become a security hole. Additionally, VSA debugging is a shared resource in a distributed environment. As such, it is important that proper security precautions be taken to prevent malicious users from obtaining this data.")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to modify Abdelilah's invention to include a debugging module communicatively coupled to the playback module that provides for controlling and observing the operation of the playback module. The modification would be obvious because one of ordinary skill in the art would be motivated to observe and isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-36)*.

As per **Claim 23**, the rejection of **Claim 19** is incorporated; however, Abdelilah does not disclose:

- wherein the model of the modem comprises a bit-exact software model of the modem that, when executed, produces results that are the same as an original modem that the bit-exact software model is modeling.

Kaler discloses:

- wherein a model of a modem comprises a bit-exact software model of the modem that, when executed, produces results that are the same as an original modem that the bit-exact software model is modeling *(see Column 32: 57-62, "As new diagram elements are identified, they are added to the user's screen 370."; Column 35: 36-47, "... so that in real time as an application is being analyzed, one block will appear, then another, and then the interconnection between the two blocks. Blocks are dynamically added, removed, and moved, and the interconnections between them are dynamically changed to reflect changing conditions in the execution of the application. The diagram is kept up to date with what is really happening.")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to modify Abdelilah's invention to include wherein the model of the modem comprises a bit-exact software model of the modem that, when executed, produces results that are the same as an original modem that the bit-exact software model is modeling. The modification would be obvious because one of ordinary skill in the art would be motivated to observe and isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-36)*.

As per **Claim 24**, the rejection of **Claim 19** is incorporated; and Abdelilah further discloses:

- a computer communicatively coupled to the modem, and wherein the memory is a memory device of the computer *(see Figure 3: 300, 310, and 315)*.

As per **Claim 25**, the rejection of **Claim 24** is incorporated; however, Abdelilah does not disclose:

- wherein the computer comprises the playback module.

Kaler discloses:

- wherein a computer comprises a playback module *(see Figure 14; Column 33: 15-20, "FIG. 14 illustrates various user interface features of an animated application model in an exemplary embodiment of the invention. The user interface features are shown generally by reference number 400. In the UI depicted in FIG. 14, diagrams are portrayed of the different blocks representing varying levels of detail of a hierarchical model of the application.")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to modify Abdelilah's invention to include wherein the computer comprises the playback module. The modification would be obvious because one of ordinary skill in the art would be motivated to observe and isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-36)*.

As per **Claim 26**, the rejection of **Claim 19** is incorporated; and Abdelilah further discloses:

- a networked computer communicatively coupled to the modem over a computer network, and wherein the networked computer comprises the memory *(see Column 8: 53-62, "Accordingly, in preferred embodiments of the present invention, modem performance is monitored by a host system 300 containing an internal modem 310. Nonetheless, the benefits of the present invention may also be obtained in various other embodiments including those in which the secondary path 335 does not return to the same host as the primary path 315. A second host may be co-located or remote from the first host. In fact, a remote second host could be at a distant location monitoring a modem connection through the secondary path 335.").*

As per **Claim 27**, Abdelilah discloses:

- operating the modem in real-time to communicatively couple the first device and the second device, the modem comprising a recording module *(see Column 7: 44-51, "The host system 300 is coupled to the modem 310 through a primary path 315 which supports communication services utilizing the modem 310. More particularly, communications from applications executed on the host system 300 are conveyed on the primary path 315 to the modem 310 for transmission through the port 320 which, in the illustrated embodiment, provides a connection to the Public Switched Telephone Network (PSTN)."; Column 8: 15-20, "The DSP memory 345 further includes one or more first-in first-out (FIFO) buffers 355, 360. The FIFO buffers 355, 360 implemented in the DSP memory 345 are used to record state transitions made for one or more of the state machines of the modem 310 as will be described further later herein." and 28-33, "... while the secondary path 335 through the bus interface 325 allows the host system 300 to access the DSP memory 345 to obtain data related to performance of the*

modem 310 during an active communication session supported by the primary path 315 to the modem 310."); and

- while operating the modem in real-time, utilizing the recording module to fully record input information input to at least the first and/or second inputs of the modem *(see Column 9: 66 and 67 to Column 10: 1-49, "... the teachings of the present invention are particularly directed to environments in which both a primary path and a secondary path are available to the DSP memory 345 to provide for monitoring operations to occur in real time while a communication connection is active through the modem. As is evident from the types of information identified above which may be monitored according to the present invention, a significant amount of performance information can be tracked during a communication connection, for example, on a minute-by-minute basis or responsive to detection of the occurrence of certain events. The monitoring system of the present invention may be utilized to monitor internal states of the modem 310 or state transitions of one or more state machines implemented within the modem 310 and to selectively record specified parameters out of the total set of parameters available within the DSP memory 345 during state conditions where the selected parameters are significant or of potential interest to a diagnostic user." and "Information may be collected on a real time basis and recorded during the life of a connection. Furthermore, information about disconnects may be gathered and throughput for a connection can be estimated. In addition, data may also be collected when a connection is being attempted, in other words, during the startup phases before a connection is in use for data communication." and "Furthermore, as performance information may be collected on a real-time basis during a connection, pertinent data may be preserved which might otherwise be lost as a result of an event causing diagnostic*

data in the DSP memory 345 to be overwritten (for example, during retrains). The performance data may be recorded while the user of the client modem 310 is actively connected to a remote server modem in a normal manner such as through a service provider end user application (e.g. AOL, IGN Dialer and Windows Dial-up Networking) executing on the host system 300. Performance data may be obtained throughout the active connection operations including both the startup phases and during data communication as well as the disconnect procedures.").

However, Abdelilah does not disclose:

- after operating the modem in real-time, executing a model of the modem, where the model is responsive to the recorded input information.

Kaler discloses:

- after operating an application in real-time, executing a model of the application, where the application is responsive to recorded input information *(see Figure 14; Column 33: 15-20, "FIG. 14 illustrates various user interface features of an animated application model in an exemplary embodiment of the invention. The user interface features are shown generally by reference number 400. In the UI depicted in FIG. 14, diagrams are portrayed of the different blocks representing varying levels of detail of a hierarchical model of the application.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to modify Abdelilah's invention to include after operating the modem in real-time, executing a model of the modem, where the model is responsive to the recorded input information. Note that Kaler also discloses that the invention has utility in analyzing the performance of computer hardware *(see Column 3: 58-65)*. The modification would be obvious because one of ordinary skill in the

art would be motivated to observe and isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-36)*.

As per **Claim 28**, the rejection of **Claim 27** is incorporated; and Abdelilah further discloses:

- the first device comprises a personal computer *(see Figure 3: 300)*; and
- utilizing the recording module comprises utilizing the recording module to fully record the input information input to at least the first and second inputs of the modem to a memory device of the personal computer *(see Column 8: 15-20, "The DSP memory 345 further includes one or more first-in first-out (FIFO) buffers 355, 360. The FIFO buffers 355, 360 implemented in the DSP memory 345 are used to record state transitions made for one or more of the state machines of the modem 310 as will be described further later herein." and 28-33, "... while the secondary path 335 through the bus interface 325 allows the host system 300 to access the DSP memory 345 to obtain data related to performance of the modem 310 during an active communication session supported by the primary path 315 to the modem 310.")*.

As per **Claim 29**, the rejection of **Claim 28** is incorporated; and Abdelilah further discloses:

- operating the modem comprises driving the modem as an operating system device driver on the personal computer *(see Column 4: 20-24, "One known approach to evaluating modem performance is the use of AT commands, such as those provided for by operating*

systems, such as Windows™ from Microsoft Corporation, for communicating with a modem (such as the #UD command).").

As per **Claim 30**, the rejection of **Claim 27** is incorporated; and Abdelilah further discloses:

- the second device is a computer *(see Column 7: 51-55, "Similarly, communications from a remote device by a server modem (not shown) are received from the PSTN through port 320 and provided to a destination application executing on the host system 300 by the modem 310.")*; and

- utilizing the recording module comprises utilizing the recording module to fully record the input information to a memory device of the computer *(see Column 8: 15-20, "The DSP memory 345 further includes one or more first-in first-out (FIFO) buffers 355, 360. The FIFO buffers 355, 360 implemented in the DSP memory 345 are used to record state transitions made for one or more of the state machines of the modem 310 as will be described further later herein." and 28-33, "... while the secondary path 335 through the bus interface 325 allows the host system 300 to access the DSP memory 345 to obtain data related to performance of the modem 310 during an active communication session supported by the primary path 315 to the modem 310.").*

As per **Claim 31**, the rejection of **Claim 30** is incorporated; and Abdelilah further discloses:

- wherein utilizing the recording module of the modem comprises executing a recording application program on the computer *(see Column 8: 15-20, "The DSP memory 345 further includes one or more first-in first-out (FIFO) buffers 355, 360. The FIFO buffers 355, 360 implemented in the DSP memory 345 are used to record state transitions made for one or more of the state machines of the modem 310 as will be described further later herein.")*.

As per **Claim 32**, the rejection of **Claim 27** is incorporated; and Abdelilah further discloses:

- the first device is a personal computer *(see Figure 3: 300)*; and
- utilizing the recording module to fully record the input information input to at least the first and/or second inputs of the modem comprises utilizing the recording module to fully record the input information *(see Column 8: 15-20, "The DSP memory 345 further includes one or more first-in first-out (FIFO) buffers 355, 360. The FIFO buffers 355, 360 implemented in the DSP memory 345 are used to record state transitions made for one or more of the state machines of the modem 310 as will be described further later herein." and 28-33, "... while the secondary path 335 through the bus interface 325 allows the host system 300 to access the DSP memory 345 to obtain data related to performance of the modem 310 during an active communication session supported by the primary path 315 to the modem 310.")* comprising:
  - data input to the first input from the personal computer *(see Column 7: 44-51, "The host system 300 is coupled to the modem 310 through a primary path 315 which supports communication services utilizing the modem 310.")*;

- commands input to a command input of the modem from the personal computer *(see Column 9: 33-37, "Performance information so obtained may include a variety of information including ... call setup return codes (CSR CODE) such as those available on Microsoft Corporation's AT code #UD (UniModem diagnostic command specification) ...")*; and

- samples input to the second input from the second device through the communication network *(see Column 7: 51-55, "Similarly, communications from a remote device by a server modem (not shown) are received from the PSTN through port 320 and provided to a destination application executing on the host system 300 by the modem 310.").*

As per **Claim 33**, the rejection of **Claim 27** is incorporated; however, Abdelilah does not disclose:

- wherein executing the model of the modem comprises executing a software model of the modem, and the method further comprises reading the recorded input information into the software model.

Kaler discloses:

- wherein executing a model of a modem comprises executing a software model of the modem, and a method further comprises reading recorded input information into the software model *(see Figure 14; Column 33: 15-20, "FIG. 14 illustrates various user interface features of an animated application model in an exemplary embodiment of the invention. The user interface features are shown generally by reference number 400. In the UI depicted in FIG. 14, diagrams are portrayed of the different blocks representing varying levels of detail of a hierarchical model of the application.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to modify Abdelilah's invention to include wherein executing the model of the modem comprises executing a software model of the modem, and the method further comprises reading the recorded input information into the software model. The modification would be obvious because one of ordinary skill in the art would be motivated to observe and isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-36)*.

As per **Claim 34**, the rejection of **Claim 27** is incorporated; however, Abdelilah does not disclose:

- wherein executing the model of the modem comprises executing a bit-exact software model of the modem.

Kaler discloses:

- wherein executing a model of a modem comprises executing a bit-exact software model of the modem *(see Column 32: 57-62, "As new diagram elements are identified, they are added to the user's screen 370."; Column 35: 36-47, "... so that in real time as an application is being analyzed, one block will appear, then another, and then the interconnection between the two blocks. Blocks are dynamically added, removed, and moved, and the interconnections between them are dynamically changed to reflect changing conditions in the execution of the application. The diagram is kept up to date with what is really happening.")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to modify

Abdelilah's invention to include wherein executing the model of the modem comprises executing a bit-exact software model of the modem. The modification would be obvious because one of ordinary skill in the art would be motivated to observe and isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-36)*.

As per **Claim 35**, the rejection of **Claim 27** is incorporated; however, Abdelilah does not disclose:

- the model of the modem comprises a software component that is the same as a software component of the modem; and
- executing the model of the modem comprises executing the software component.

Kaler discloses:

- a model of a modem comprises a software component that is the same as a software component of the modem *(see Figure 14; Column 33: 15-20, "FIG. 14 illustrates various user interface features of an animated application model in an exemplary embodiment of the invention. The user interface features are shown generally by reference number 400. In the UI depicted in FIG. 14, diagrams are portrayed of the different blocks representing varying levels of detail of a hierarchical model of the application.")*; and
- executing the model of the modem comprises executing the software component *(see Column 35: 36-47, "... so that in real time as an application is being analyzed, one block will appear, then another, and then the interconnection between the two blocks. Blocks are dynamically added, removed, and moved, and the interconnections between them are*

dynamically changed to reflect changing conditions in the execution of the application. The diagram is kept up to date with what is really happening.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to modify Abdelilah's invention to include the model of the modem comprises a software component that is the same as a software component of the modem; and executing the model of the modem comprises executing the software component. The modification would be obvious because one of ordinary skill in the art would be motivated to observe and isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-36).*

As per **Claim 36**, the rejection of **Claim 27** is incorporated; however, Abdelilah does not disclose:

- the model of the modem comprises a hardware component that is the same as a hardware component of the modem; and
- executing the model of the modem comprises utilizing the hardware component.

Kaler discloses:

- a model of a modem comprises a hardware component that is the same as a hardware component of the modem *(see Figure 14; Column 3: 58-65, "While the invention has utility in analyzing the performance of a software application that is executing on a distributed data processing system, its utility is not limited to such, and it has utility in analyzing the performance of computer hardware ..."; Column 33: 15-20, "FIG. 14 illustrates various user interface features of an animated application model in an exemplary embodiment of the invention. The*

user interface features are shown generally by reference number 400. In the UI depicted in FIG. 14, diagrams are portrayed of the different blocks representing varying levels of detail of a hierarchical model of the application."); and

- executing the model of the modem comprises utilizing the hardware component *(see Column 35: 36-47, "... so that in real time as an application is being analyzed, one block will appear, then another, and then the interconnection between the two blocks. Blocks are dynamically added, removed, and moved, and the interconnections between them are dynamically changed to reflect changing conditions in the execution of the application. The diagram is kept up to date with what is really happening.")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to modify Abdelilah's invention to include the model of the modem comprises a hardware component that is the same as a hardware component of the modem; and executing the model of the modem comprises utilizing the hardware component. The modification would be obvious because one of ordinary skill in the art would be motivated to observe and isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-36)*.

As per **Claim 37**, the rejection of **Claim 27** is incorporated; however, Abdelilah does not disclose:

- debugging operation of the modem by, at least in part, observing execution of the model with the recorded input information in non-real-time.

Kaler discloses:

- debugging operation of a modem by, at least in part, observing execution of a model with recorded input information in non-real-time *(see Column 22: 50-67 to Column 23: 1-11, "Like any debugging tool, the VSA should ensure that the debuggability of the system cannot become a security hole. Additionally, VSA debugging is a shared resource in a distributed environment. As such, it is important that proper security precautions be taken to prevent malicious users from obtaining this data.")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to modify Abdelilah's invention to include debugging operation of the modem by, at least in part, observing execution of the model with the recorded input information in non-real-time. The modification would be obvious because one of ordinary skill in the art would be motivated to observe and isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-36)*.

As per **Claim 38**, the rejection of **Claim 27** is incorporated; and Abdelilah further discloses:

- wherein the modem comprises an ADSL modem *(see Column 7: 60-63, "Similarly, when connected with a broadband network, the modem 310 may be a cable modem, an Asymmetric Digital Subscriber Line (ADSL) ...")*.

As per **Claim 42**, the rejection of **Claim 19** is incorporated; however, Abdelilah does not disclose:

- wherein the model of the modem comprises a bit-exact software model of the modem that exactly mimics the real-time operation of the modem.

Kaler discloses:

- wherein a model of a modem comprises a bit-exact software model of the modem that exactly mimics real-time operation of the modem *(see Column 32: 57-62, "As new diagram elements are identified, they are added to the user's screen 370."; Column 35: 36-47, "... so that in real time as an application is being analyzed, one block will appear, then another, and then the interconnection between the two blocks. Blocks are dynamically added, removed, and moved, and the interconnections between them are dynamically changed to reflect changing conditions in the execution of the application. The diagram is kept up to date with what is really happening.")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to modify Abdelilah's invention to include wherein the model of the modem comprises a bit-exact software model of the modem that exactly mimics the real-time operation of the modem. The modification would be obvious because one of ordinary skill in the art would be motivated to observe and isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-36)*.

As per **Claim 43**, the rejection of **Claim 19** is incorporated; however, Abdelilah does not disclose:

- wherein the playback module comprises playback software that, when executed by a processor, causes the reading of the input information into the model of the modem.

Kaler discloses:

- wherein a playback module comprises playback software that, when executed by a processor, causes reading of input information into a model of a modem *(see Column 34: 5-9, "Using the VCR paradigm to control the depiction of the application performance, the VSA can run through each of the events and correspondingly animate the application model shown in FIG. 13 or FIG. 14.")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to modify Abdelilah's invention to include wherein the playback module comprises playback software that, when executed by a processor, causes the reading of the input information into the model of the modem. The modification would be obvious because one of ordinary skill in the art would be motivated to observe and isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-36)*.

As per **Claim 44**, the rejection of **Claim 19** is incorporated; however, Abdelilah does not disclose:

- wherein the model of the modem comprises a software component that is the same as a software component of the modem being modeled.

Kaler discloses:

- wherein a model of a modem comprises a software component that is the same as a software component of the modem being modeled *(see Figure 14; Column 33: 15-20, "FIG. 14 illustrates various user interface features of an animated application model in an exemplary*

embodiment of the invention. The user interface features are shown generally by reference number 400. In the UI depicted in FIG. 14, diagrams are portrayed of the different blocks representing varying levels of detail of a hierarchical model of the application.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to modify Abdelilah's invention to include wherein the model of the modem comprises a software component that is the same as a software component of the modem being modeled. The modification would be obvious because one of ordinary skill in the art would be motivated to observe and isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-36).*

As per **Claim 46**, the rejection of **Claim 19** is incorporated; however, Abdelilah does not disclose:

- wherein the playback module comprises playback software comprising a bit-exact model of the operation of the modem, such that any modem behaviors that occurred in real-time operation during the period of time over which the input information was obtained will recur during execution of the playback software in the non-real-time playback environment.

Kaler discloses:

- wherein a playback module comprises playback software comprising a bit-exact model of the operation of a modem, such that any modem behaviors that occurred in real-time operation during a period of time over which input information was obtained will recur during execution of the playback software in a non-real-time playback environment *(see Column 32:*

57-62, "As new diagram elements are identified, they are added to the user's screen 370."; Column 33: 28-31, "... users can play and replay the application execution, stop, pause, reverse, speed up, slow down, and so forth."; Column 35: 36-47, "In addition, all of the above windows can be operated to display the application performance in real time as well as "post mortem". ... so that in real time as an application is being analyzed, one block will appear, then another, and then the interconnection between the two blocks. Blocks are dynamically added, removed, and moved, and the interconnections between them are dynamically changed to reflect changing conditions in the execution of the application. The diagram is kept up to date with what is really happening.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Kaler into the teaching of Abdelilah to modify Abdelilah's invention to include wherein the playback module comprises playback software comprising a bit-exact model of the operation of the modem, such that any modem behaviors that occurred in real-time operation during the period of time over which the input information was obtained will recur during execution of the playback software in the non-real-time playback environment. The modification would be obvious because one of ordinary skill in the art would be motivated to observe and isolate undesirable modem performance and behavior *(see Kaler – Column 1: 33-36).*

3. **Claim 45** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Abdelilah** in view of **Kaler** as applied to Claim 19 above, and further in view of **US 5,353,243 (hereinafter "Read")**.

As per **Claim 45**, the rejection of **Claim 19** is incorporated; however, Abdelilah and Kaler do not disclose:

- wherein the model of the modem is a hardware model that comprises an actual hardware component that is the same as a hardware component of the modem being modeled.

Read discloses:

- wherein a model of a modem is a hardware model that comprises an actual hardware component that is the same as a hardware component of the modem being modeled *(see Column 4: 32-50, "The HMS of the present invention provides hardware models of standard ICs, ASICs, and electronic subsystems. The HMS has a number of applications. Some of the major ones are as follows: ...").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Read into the teaching of Abdelilah to modify Abdelilah's invention to include wherein the model of the modem is a hardware model that comprises an actual hardware component that is the same as a hardware component of the modem being modeled. The modification would be obvious because one of ordinary skill in the art would be motivated to verify both logic and timing behavior of a modem *(see Read – Column 1: 21-31).*

(10) Response to Argument

I. Claims 9-13 and 39-41 Are Not Anticipated by Abdelilah

In the Appeal Brief, Appellant argues:

a) Abdelilah merely teaches processing and storing **select data** related to diagnostics, modem performance and internal states.14 Nowhere in Abdelilah is there any disclosure regarding **fully recording input information arriving at one or both of the first input and the second input**. Rather, Abdelilah identifies the select data that may be obtained, for example, at Column 9, Lines 33-61. More specifically, Abdelilah explicitly and repeatedly discloses that it merely captures "a selected type of data related to the performance of the modem responsive to a state transition." Thus, because Abdelilah merely discloses processing and storing **select data** related to diagnostics, performance and internal states, Abdelilah fails to disclose "a recording module processor communicatively coupled to the first input and the second input that **operates to fully record input information arriving at one or both of the first input and the second input** during real-time operation of the modem device for subsequent non-real-time analysis," as recited by the Appellant in independent claim 9.

(See Appeal Brief – page 8, emphasis in original.)

Examiner's response:

a) Examiner disagrees. Appellant's arguments are not persuasive for at least the following reasons:

First, without acquiescing to the Appellant's assertion that nowhere in Abdelilah is there any disclosure regarding fully recording input information arriving at one or both of the first input and the second input, the Examiner first submits that in the "Remarks" (received on

01/27/2010), the Appellant states that the specification explicitly teaches fully recording the information that is input to a real-time communication device in paragraphs [11], [22], and [29]. However, paragraph [11] is the only paragraph in the specification that states "fully record[ing] real-time information (*e.g.*, samples, data and commands) that is input to a real-time communication device." Nowhere in the specification does the Appellant explicitly state that *all* of the information arriving at one or both of the first input and the second input is recorded. At best, in Figure 1 and paragraphs [11] and [29] of the Appellant's disclosure, the Appellant only describes that samples, data, and commands are recorded by a real-time communication device.

Second, the claims recite only "fully record" with no further clarification on the claim scope of the term "fully" as intended by the Appellant to cover. The claims are not limited to the scope of recording all of the information. Thus, as the claims are interpreted as broadly as their terms reasonably allow (see MPEP § 2111.01(I)), the interpretation of a broad limitation of "fully record" as recording samples, data, and commands and the like by one of ordinary skill in the art is considered to be reasonable by its plain meaning and/or in light of the specification.

Third, with respect to the Appellant's assertion that nowhere in Abdelilah is there any disclosure regarding fully recording input information arriving at one or both of the first input and the second input, as previously pointed out in the Final Rejection (mailed on 04/19/2010) and the Advisory Action (mailed on 06/30/2010) and further clarified hereinafter, the Examiner respectfully submits that Abdelilah clearly discloses **"a recording module processor communicatively coupled to the first input and the second input that operates to fully record input information arriving at one or both of the first input and the second input during real-time operation of the modem device for subsequent non-real-time analysis"**

(see Column 9: 66 and 67 to Column 10: 1-49, "... the teachings of the present invention are particularly directed to environments in which both a primary path [first input] and a secondary path are available to the DSP memory 345 to provide for monitoring operations to occur in real time while a communication connection is active through the modem. As is evident from the types of information identified above which may be monitored according to the present invention, a significant amount of performance information can be tracked during a communication connection, for example, on a minute-by-minute basis or responsive to detection of the occurrence of certain events. The monitoring system of the present invention may be utilized to monitor internal states of the modem 310 or state transitions of one or more state machines implemented within the modem 310 and to selectively record specified parameters out of the total set of parameters available within the DSP memory 345 during state conditions where the selected parameters are significant or of potential interest to a diagnostic user." and "Information may be collected on a real time basis and recorded during the life of a connection. Furthermore, information about disconnects may be gathered and throughput for a connection can be estimated. In addition, data may also be collected when a connection is being attempted, in other words, during the startup phases before a connection is in use for data communication." and "Furthermore, as performance information may be collected on a real-time basis during a connection, pertinent data may be preserved which might otherwise be lost as a result of an event causing diagnostic data in the DSP memory 345 to be overwritten (for example, during retrains). The performance data may be recorded while the user of the client modem 310 is actively connected to a remote server modem in a normal manner such as through a service provider end user application (e.g. AOL, IGN Dialer and Windows Dial-up Networking)

executing on the host system 300. Performance data may be obtained throughout the active connection operations including both the startup phases and during data communication as well as the disconnect procedures."). Note that Abdelilah clearly discloses recording the data, samples, and commands of a modem and thereby, fully records input information arriving at one or both of the first input and the second input. Abdelilah's invention records real-time modem performance data, internal states of the modem, modem communication data, and modem startup and disconnect data, etc. during the life of a connection of the modem. Thus, one of ordinary skill in the art would readily recognize that the various pertinent data and information recorded are the data (modem performance data), samples (internal states of the modem), and commands (modem startup and disconnect data) of the modem.

Fourth, the Examiner further submits that Abdelilah's invention is directed to monitoring the performance of a modem which may be able to obtain data in real-time. Abdelilah discloses that real-time modem performance data, internal states of the modem, modem communication data, and modem startup and disconnect data, etc. are recorded during the life of a connection of the modem. Thus, one of ordinary skill in the art would readily comprehend that pertinent data and information related to the performance of the modem must be fully recorded in order to provide a complete analysis of the performance of the modem at a later time. For further clarification, the Examiner also submits that in order for Abdelilah's invention to monitor the performance of a modem, all data related to the performance of the modem must be recorded. Otherwise, the manufacturer/user of the modem would not be able to completely monitor the performance of the modem and diagnose any performance problems of the modem due to insufficient performance data collected.

Therefore, for at least the reasons set forth above, the rejection made under 35 U.S.C. § 102(e) with respect to Claim 9 is proper and therefore, maintained.

In the Appeal Brief, Appellant argues:

b) For example, regarding Appellant's dependent claim 10, Abdelilah at least fails to disclose "**a command input** that receives modem control commands from the first device, and wherein the recording module processor further causes **modem control commands arriving at the command input during real-time operation of the modem device to be fully recorded** for subsequent non-real-time analysis." The Final Office Action alleges that the limitations of Appellant's dependent claim 10 are anticipated by Abdelilah's disclosure of "see Column 9: 33-37, 'Performance information so obtained may include a variety of information including … call setup return codes (CSR CODE) such as those available on Microsoft Corporation's AT code #UD (UniModem diagnostic command specification) …' , However, as one of ordinary skill in the art would readily be able to ascertain, Abdelilah's mere disclosure of obtaining call setup return codes does not teach or suggest **fully recording modem control commands arriving at a command input**. More specifically, Abdelilah does not even specifically disclose a command input, let alone recording all of the modem control commands arriving at a command input.

(See Appeal Brief – page 13 to page 14, emphasis in original.)

Examiner's response:

b) Examiner disagrees. With respect to the Appellant's assertion that Abdelilah at least fails to disclose "a command input that receives modem control commands from the first device, and

wherein the recording module processor further causes modem control commands arriving at the command input during real-time operation of the modem device to be fully recorded for subsequent non-real-time analysis," the Examiner respectfully submits that Abdelilah clearly discloses **"a command input that receives modem control commands from the first device, and wherein the recording module processor further causes commands arriving at the command input during real-time operation of the modem device to be fully recorded for subsequent non-real-time analysis"** *(see Column 9: 66 and 67 to Column 10: 1-5, "... the teachings of the present invention are particularly directed to environments in which both a primary path [command input] and a secondary path are available to the DSP memory 345 to provide for monitoring operations to occur in real time while a communication connection is active through the modem."; Column 9: 33-37, "Performance information so obtained may include a variety of information including ... call setup return codes (CSR CODE) such as those available on Microsoft Corporation's AT code #UD (UniModem diagnostic command specification) [modem control commands] ...")*. Note that Abdelilah's invention records performance information, via the primary path (command input), which includes call setup return codes (CSR CODE) such as those available on Microsoft Corporation's AT code #UD (UniModem diagnostic command specification) (modem control commands). Also note that Abdelilah clearly discloses "fully record" as discussed in the Examiner's response (I)(a) hereinabove.

Therefore, for at least the reason set forth above, the rejection made under 35 U.S.C. § 102(e) with respect to Claim 10 is proper and therefore, maintained.

In the Appeal Brief, Appellant argues:

c) As another example, regarding Appellant's dependent claim 11, Abdelilah at least fails to disclose "wherein the first device is a personal computer, and wherein the recording module operates to cause the **input information arriving at the first input from the personal computer and arriving at the second input from the second device through the communication network, during real-time operation of the modem device, to be fully recorded on a memory device of the personal computer**." The Final Office Action states the following:

...

However, the Appellant notes that, as shown above, Abdelilah's disclosure at Column 7, Lines 51-55 merely describes the host system 300 and a remote device communicating via a modem 310, which fails to teach fully recording input information arriving at a first input and a second input on a memory device of a personal computer. Further, Abdelilah's disclosure at Column 8, Lines 15-20 merely states that state transitions are recorded at FIFO buffers 355, 360 of DSP memory 345. However, as shown in Figure 3, FIFO buffers 355, 360 of DSP memory 345 are part of modem 310, not a personal computer (PC). Further, as is well known in the art, merely recording state transitions fails to teach fully recording input information arriving at a first input and a second input on a memory device of a personal computer.

(See Appeal Brief – page 14 to page 15, emphasis in original.)

Examiner's response:

c) Examiner disagrees. With respect to the Appellant's assertion that Abdelilah at least fails to disclose "wherein the first device is a personal computer, and wherein the recording module operates to cause the input information arriving at the first input from the personal computer and arriving at the second input from the second device through the communication network, during real-time operation of the modem device, to be fully recorded on a memory device of the personal computer," the Examiner respectfully submits that Abdelilah clearly discloses **"wherein the first device is a personal computer, and wherein the recording module processor operates to cause the input information arriving at the first input from the personal computer and arriving at the second input from the second device through the communication network, during real-time operation of the modem device, to be fully recorded on a memory device of the personal computer"** *(see Column 7: 37 and 38, "... the modem 310 is an internal modem device contained within the host system 300." and 44-55, "The host system 300 [personal computer] is coupled to the modem 310 through a primary path 315 [first input] which supports communication services utilizing the modem 310 ... Similarly, communications from a remote device [second device] by a server modem (not shown) are received from the PSTN through port 320 [second input] and provided to a destination application executing on the host system 300 by the modem 310."; Column 8: 3-7, "... references to the DSP memory 345 [memory device of the personal computer] associated with the DSP 340 refer to the memory or memories within the modem 310 which are utilized for data storage by the DSP 340 during communication operations of the modem 310 supporting an active connection.")*. Note that Abdelilah's invention records the communication operations of the modem arriving from the host system (personal computer) and the remote device (second

device) on the DSP memory of the modem which is contained within the host system. Also note that Abdelilah clearly discloses "fully record" as discussed in the Examiner's response (I)(a) hereinabove.

Therefore, for at least the reason set forth above, the rejection made under 35 U.S.C. § 102(e) with respect to Claim 11 is proper and therefore, maintained.

In the Appeal Brief, Appellant argues:

d) Additionally, regarding Appellant's dependent claim 12, Abdelilah at least fails to teach or suggest, for example, "wherein **the recording module processor operates to cause input information arriving at the first input from the first device and arriving at the second input from the second device** through the communication network to be communicated to a networked computer communicatively coupled to the modem device over the communication network and **fully recorded on a memory device of the networked computer**." The Final Office Action states the following:

…

However, Abdelilah's disclosure of using a remote second host to monitor a modem connection does not teach a recording module processor of a modem device causing input information arriving at a first input from a first device and arriving at a second input from a second device to be fully recorded on a memory device of a networked computer. More specifically, nowhere in Abdelilah is there any disclosure of a processor within Abdelilah's modem 310 that causes the information arriving at first and second inputs of the modem 310 to be fully recorded at a networked computer's memory device.

(See Appeal Brief – page 15 to page 16, emphasis in original.)

Examiner's response:

d) Examiner disagrees. With respect to the Appellant's assertion that Abdelilah at least fails to teach or suggest, for example, "wherein the recording module processor operates to cause input information arriving at the first input from the first device and arriving at the second input from the second device through the communication network to be communicated to a networked computer communicatively coupled to the modem device over the communication network and fully recorded on a memory device of the networked computer," the Examiner respectfully submits that Abdelilah clearly discloses **"wherein the recording module processor operates to cause input information arriving at the first input from the first device and arriving at the second input from the second device through the communication network to be communicated to a networked computer communicatively coupled to the modem device over the communication network and fully recorded on a memory device of the networked computer"** *(see Column 8: 3-7, "... references to the DSP memory 345 associated with the DSP 340 refer to the memory or memories within the modem 310 which are utilized for data storage by the DSP 340 during communication operations of the modem 310 supporting an active connection." and 36-39, "A secondary path 335 can also be provided through other means, for example, to provide for implementation of the systems and methods of the present invention where external modems are used to support the host system 300."and 53-62, "Accordingly, in preferred embodiments of the present invention, modem performance is monitored by a host system 300 containing an internal modem 310. Nonetheless, the benefits of the present invention*

may also be obtained in various other embodiments including those in which the secondary path 335 does not return to the same host as the primary path 315. A second host [networked computer] may be co-located or remote from the first host. In fact, a remote second host could be at a distant location monitoring a modem connection through the secondary path 335.").

Note that Abdelilah's invention provides an external modem as part of a second host (networked computer) to record the communication operations of the modem arriving from the host system and the remote device. Thus, one of ordinary skill in the art would readily comprehend that the external modem is functionally equivalent to the host system's modem and can be used to store modem data as well. Also note that Abdelilah clearly discloses "fully record" as discussed in the Examiner's response (I)(a) hereinabove.

Therefore, for at least the reason set forth above, the rejection made under 35 U.S.C. § 102(e) with respect to Claim 12 is proper and therefore, maintained.

In the Appeal Brief, Appellant argues:

e) Further, regarding Appellant's dependent claim 39, Abdelilah at least fails to teach or suggest, for example, "wherein **the modem device operates to cause the input information to be fully recorded on the memory device of the personal computer** by, at least in part, **being driven as an operating system (OS) device driver of the personal computer to write the input information directly to a hard drive of the personal computer**." The Final Office Action states the following:

…

However, as is well known in the art, AT#UD (i.e., unimodem diagnostics command) is in reference to a command that causes select diagnostic information to be logged (e.g., whether call setup failed, reason for call termination, etc.). The AT#UD command does not cause input information to be fully recorded, nor does it cause information to be directly written to a hard drive of a personal computer. In fact, the two sentences after the section cited in Abdelilah explicitly teach that "[h]owever, only a limited amount of diagnostic information may be obtained from a modem using this approach. Furthermore, the modem communication session typically must be terminated to obtain information using AT commands, which not only interrupts ongoing operations but further may limit the amount and types of data available from the modem, (for example, due to retraining procedures overwriting various data within the modem)." As such, the cited section of Abdelilah clearly cannot teach "wherein the modem device operates to cause the input information to be fully recorded on the memory device of the personal computer by, at least in part, being' driven as an operating system (OS) device driver of the personal computer to write the input information directly to a hard drive of the personal computer," as set forth in Appellant's dependent claim 39.

(See Appeal Brief – page 16 to page 17, emphasis in original.)

Examiner's response:

e) Examiner disagrees. With respect to the Appellant's assertion that Abdelilah at least fails to teach or suggest, for example, "wherein the modem device operates to cause the input information to be fully recorded on the memory device of the personal computer by, at least in part, being driven as an operating system (OS) device driver of the personal computer to write

the input information directly to a hard drive of the personal computer," the Examiner respectfully submits that Abdelilah clearly discloses **"wherein the modem device operates to cause the input information to be fully recorded on the memory device of the personal computer by, at least in part, being driven as an operating system (OS) device driver of the personal computer to write the input information directly to a hard drive of the personal computer"** *(see Column 4: 20-26, "One known approach to evaluating modem performance is the use of AT commands [operating system (OS) device drivers], such as those provided for by operating systems, such as Windows™ from Microsoft Corporation, for communicating with a modem (such as the #UD command). However, only a limited amount of diagnostic information may be obtained from a modem using this approach."; Column 7: 37 and 38, "... the modem 310 is an internal modem device contained within the host system 300."; Column 8: 3-12, "... references to the DSP memory 345 [hard drive of the personal computer] associated with the DSP 340 refer to the memory or memories within the modem 310 which are utilized for data storage by the DSP 340 during communication operations of the modem 310 supporting an active connection. This memory may include a separate memory device coupled to the DSP 340 over the DSP bus 350 and may further include memory which is contained within the circuit device of DSP 340 which is nonetheless available over the DSP system bus 350.")*. Note that Abdelilah discloses using the operating system's AT commands (operating system (OS) device drivers) to obtain diagnostic information from the modem. The obtained diagnostic information is stored in the DSP memory (hard drive of the personal computer) of the modem which is contained within the host system. Also note that Abdelilah clearly discloses "fully record" as discussed in the Examiner's response (I)(a) hereinabove.

Therefore, for at least the reason set forth above, the rejection made under 35 U.S.C. § 102(e) with respect to Claim 39 is proper and therefore, maintained.

In the Appeal Brief, Appellant argues:

f) Also, regarding Appellant's dependent claim 40, Abdelilah at least fails to disclose "wherein **the recording module processor** is integrated into an integrated circuit **of the modem device**." The Final Office Action alleges that the limitations of Appellant's dependent claim 40 are anticipated by Abdelilah's disclosure of "see Figure 3: 340, 345, 355, and 360." However, none of the components listed by the Examiner (e.g., DSP 340, DSP memory 345, FIFO Buffer 1 355, FIFO Buffer n 360) operate to fully record input information arriving at one or both of the first input and the second input during real-time operation of the modem device for subsequent non-real-time analysis. Instead, as discussed above, Abdelilah merely teaches processing and storing **select data** related to diagnostics, performance and internal states.

(See Appeal Brief – page 17, emphasis in original.)

Examiner's response:

f) Examiner disagrees. With respect to the Appellant's assertion that Abdelilah at least fails to disclose "wherein the recording module processor is integrated into an integrated circuit of the modem device," the Examiner respectfully submits that Abdelilah clearly discloses **"wherein the recording module processor is integrated into an integrated circuit of the modem device"** *(see Figure 3: 340 and 345; Column 8: 3-7, "... references to the DSP memory 345 [recording module processor] associated with the DSP 340 [integrated circuit of the modem*

device] refer to the memory or memories within the modem 310 which are utilized for data storage by the DSP 340 during communication operations of the modem 310 supporting an active connection."). Note that Abdelilah discloses that the DSP memory (recording module processor) is associated with the DSP (digital signal processor) (integrated circuit of the modem device) which are utilized for data storage.

Therefore, for at least the reason set forth above, the rejection made under 35 U.S.C. § 102(e) with respect to Claim 40 is proper and therefore, maintained.

In the Appeal Brief, Appellant argues:

g) Additionally, regarding Appellant's dependent claim 41, Abdelilah at least fails to teach or suggest, for example, "wherein the recording module processor operates to cause **the input information arriving at the first input and the second input** during real-time operation of the modem device **to be fully recorded in exactly the same sequence as the input information is received at the modem device**." The Final Office Action states the following:

…

However, Abdelilah's disclosure of recording state transitions and obtaining data related to the performance of the modem 310 does not teach **fully recording the input information arriving at the first input and the second input**, let alone fully recording the input information **in the exact same sequence** as received at the modem device.

(See Appeal Brief – page 18, emphasis in original.)

Examiner's response:

g) Examiner disagrees. With respect to the Appellant's assertion that Abdelilah at least fails to teach or suggest, for example, "wherein the recording module processor operates to cause the input information arriving at the first input and the second input during real-time operation of the modem device to be fully recorded in exactly the same sequence as the input information is received at the modem device," the Examiner respectfully submits that Abdelilah clearly discloses **"wherein the recording module processor operates to cause the input information arriving at the first input and the second input during real-time operation of the modem device to be fully recorded in exactly the same sequence as the input information is received at the modem device"** *(see Column 8: 15-20, "The DSP memory 345 further includes one or more first-in first-out (FIFO) buffers 355, 360. The FIFO buffers 355, 360 implemented in the DSP memory 345 are used to record state transitions made for one or more of the state machines of the modem 310 as will be described further later herein.")*. Note that Abdelilah discloses that the DSP memory includes FIFO buffers which are used to record state transitions of the modem. Thus, one of ordinary skill in the art would readily comprehend that the FIFO buffers record the state transitions in the same sequence as the order of the modem's state transitions. Also note that Abdelilah clearly discloses "fully record" as discussed in the Examiner's response (I)(a) hereinabove.

Therefore, for at least the reason set forth above, the rejection made under 35 U.S.C. § 102(e) with respect to Claim 41 is proper and therefore, maintained.

II. Claims 19-38, 42-44 and 46 Are Not Obvious Over Abdelilah in view of Kaler

In the Appeal Brief, Appellant argues:

a) As discussed above with regard to Appellant's independent claim 9, Abdelilah merely teaches processing and storing **select data** related to diagnostics, modem performance and internal states. Nowhere in Abdelilah is there any disclosure regarding **fully recording the input information received at a modem**. Rather, Abdelilah identifies the select data that may be obtained, for example, at Column 9, Lines 33-61. More specifically, Abdelilah explicitly and repeatedly discloses that it merely captures "a selected type of data related to the performance of the modem responsive to a state transition." Kaler fails to remedy the deficiencies of Abdelilah. Nowhere in Kaler is there any disclosure of fully recording input information received at a modem. Thus, because Abdelilah merely discloses processing and storing **select data** related to diagnostics, performance and internal states, and Kaler fails to remedy the deficiencies of Abdelilah, the combination of Abdelilah and Kaler at least fails to disclose "wherein the recording module **fully records the input information received at the modem** during real-time operation of the modem," as set forth in Appellant's independent claim 19; and, "while operating the modem in real-time, utilizing the recording module to **fully record input information input to at least the first and/or second inputs of the modem**," as set forth in Appellant's independent claim 27.

(See Appeal Brief – page 19 to page 20, emphasis in original.)

Examiner's response:

a) Examiner disagrees. With respect to the Appellant's assertion that Nowhere in Abdelilah is there any disclosure regarding fully recording the input information received at a modem, the

Examiner respectfully submits that the Examiner has addressed the Appellant's arguments in the Examiner's response (I)(a) hereinabove.

Therefore, for at least the reason set forth above, the rejections made under 35 U.S.C. § 103(a) with respect to Claims 19 and 27 are proper and therefore, maintained.

In the Appeal Brief, Appellant argues:

b) Nowhere in the combination of Abdelilah and Kaler is there any disclosure of a bit-exact software model of a modem or the operation of a modem. As such, the combination of Abdelilah and Kaler cannot teach "wherein the model of the modem comprises a bit-exact software model of the modem that, when executed produces results that are the same as an original modem that the bit-exact software model is modeling," as set forth in Appellant's dependent claim 23; "wherein executing the model of the modem comprises executing a bit-exact software model of the modem," as recited in Appellant's dependent claim 34; "wherein the model of the modem comprises a bit-exact software model of the modem that exactly mimics the real-time operation of the modem," as set forth in Appellant's dependent claim 42; and, "wherein the playback module comprises playback software comprising a bit-exact model of the operation of the modem, such that any modem behaviors that occurred in real-time operation during the period of time over which the input information was obtained will recur during execution of the playback software in the non-real-time playback environment," as set forth in Appellant's dependent claim 46.

(See Appeal Brief – page 26 to page 27.)

Examiner's response:

b) Examiner disagrees. With respect to the Appellant's assertion that nowhere in the combination of Abdelilah and Kaler is there any disclosure of a bit-exact software model of a modem or the operation of a modem, the Examiner respectfully submits that the combination of Abdelilah and Kaler clearly discloses a bit-exact software model of a modem or the operation of a modem. Abdelilah discloses **a modem** *(see Figure 3: 310)*. However, Abdelilah does not explicitly disclose **a bit-exact software model of the modem**. Kaler discloses **a bit-exact software model of an application** *(see Figure 13; Column 32: 28-34, "FIG. 13 illustrates a screen print of an animated application model [bit-exact software model] which the present invention generates to show the structure and activity of an application whose performance is being studied. An important innovation in the VSA's analysis function is its ability to dynamically generate diagrams of the functionally active structure of the application.")*. Note that Kaler discloses that the animated application model shows the structure and activity of an application whose performance is being studied. Those of ordinary skill in the art would readily comprehend that the animated application model is a "bit-exact" software model of the application in order to accurately and precisely study its performance. Thus, in view of the teaching of Kaler, one of ordinary skill in the art would be motivated to implement a bit-exact software model for Abdelilah's modem because Kaler's invention has utility in analyzing the performance of computer hardware *(see Kaler – Column 3: 58-65)*. The modification would be obvious because one of ordinary skill in the art would be motivated to observe and isolate undesirable modem performance and behavior during non-real-time playback of the software model of the modem *(see Kaler – Column 1: 33-36)*.

Therefore, for at least the reason set forth above, the rejections made under 35 U.S.C. § 103(a) with respect to Claims 23, 34, 42, and 46 are proper and therefore, maintained.

In the Appeal Brief, Appellant argues:

c) As another example, regarding Appellant's dependent claim 28, the combination of Abdelilah and Kaler at least fails to disclose "utilizing the recording module comprises utilizing the recording module **to fully record the input information to at least the first and second inputs of the modem to a memory device of the personal computer**." The Final Office Action states the following:

...

However, Abdelilah's disclosure at Column 8, Lines 15-20 merely states that state transitions are recorded at FIFO buffers 355, 360 of DSP memory 345. As shown in Figure 3, FIFO buffers 355, 360 of DSP memory 345 are part of modem 310, not a personal computer (PC). Further, as is well known in the art, merely recording state transitions and obtaining data related to the performance of a modem fails to teach fully recording input information arriving at a first input and a second input on a memory device of a personal computer. Kaler fails to remedy the deficiencies of Abdelilah.

(See Appeal Brief – page 27 to page 28, emphasis in original.)

Examiner's response:

c) Examiner disagrees. With respect to the Appellant's assertion that the combination of Abdelilah and Kaler at least fails to disclose "utilizing the recording module comprises utilizing

the recording module to fully record the input information to at least the first and second inputs of the modem to a memory device of the personal computer," the Examiner respectfully submits that the Examiner has addressed the Appellant's arguments in the Examiner's responses (I)(a) and (I)(c) hereinabove.

Therefore, for at least the reason set forth above, the rejection made under 35 U.S.C. § 103(a) with respect to Claim 28 is proper and therefore, maintained.

In the Appeal Brief, Appellant argues:

d) Additionally, regarding Appellant's dependent claim 30, the combination of Abdelilah and Kaler at least fails to disclose, for example, "the second device is a computer; and utilizing the recording module comprises utilizing the recording module to fully record input information to a memory device of the computer." The Final Office Action states the following:

...

However, Appellant's claim 30 is dependent on claim 27, which recites "the modem comprising a first input that receives information from a first device that is utilizing the modem to communicate with a second device through a communication network and a second input that receives information from the second device through the communication network." Although Abdelilah teaches receiving information from host 300 (i.e. a first device) at a modem 310 to communicate with a remote device (i.e., a second device) via a server modem over a PSTN (i.e., communication network), nowhere in Abdelilah is there any disclosure that the remote device (i.e., the second device) is a computer, nor is there any disclosure in Abdelilah that a recording module in Abdelilah's modem 310 is utilized to **fully record input information to a memory**

device of the computer (i.e., memory of the remote device). Kaler fails to remedy the deficiencies of Abdelilah. As such, the combination of Abdelilah and Kaler cannot teach "the second device is a computer; and utilizing the recording module comprises utilizing the recording module to fully record input information to a memory device of the computer," as recited in Appellant's dependent claim 30.

(See Appeal Brief – page 28 to page 29, emphasis in original.)

Examiner's response:

d) Examiner disagrees. With respect to the Appellant's assertion that the combination of Abdelilah and Kaler at least fails to disclose, for example, "the second device is a computer; and utilizing the recording module comprises utilizing the recording module to fully record input information to a memory device of the computer," the Examiner respectfully submits that Abdelilah clearly discloses **"the second device is a computer** *(see Column 7: 51-55, "Similarly, communications from a remote device [second device] by a server modem (not shown) are received from the PSTN through port 320 and provided to a destination application executing on the host system 300 by the modem 310.")*; **and utilizing the recording module comprises utilizing the recording module to fully record the input information to a memory device of the computer"** *(see Column 8: 3-7, "... references to the DSP memory 345 associated with the DSP 340 refer to the memory or memories within the modem 310 which are utilized for data storage by the DSP 340 during communication operations of the modem 310 supporting an active connection." and 36-39, "A secondary path 335 can also be provided through other means, for example, to provide for implementation of the systems and methods of the present*

invention where external modems [memory devices of the computer] are used to support the host system 300."and 53-59, "Accordingly, in preferred embodiments of the present invention, modem performance is monitored by a host system 300 containing an internal modem 310. Nonetheless, the benefits of the present invention may also be obtained in various other embodiments including those in which the secondary path 335 does not return to the same host as the primary path 315."). Note that Abdelilah discloses that the remote device communicates with the host system using server modem. Thus, one of ordinary skill in the art would readily comprehend that the server modem must be contained within a computer. Also note that Abdelilah's invention provides an external modem, for example, the remote device's server modem, which can be used to record the communication operations of the modem arriving from the host system and the remote device. Thus, one of ordinary skill in the art would readily comprehend that the remote device's server modem is functionally equivalent to the host system's modem and can be used to store modem data as well. Further note that Abdelilah clearly discloses "fully record" as discussed in the Examiner's response (I)(a) hereinabove.

Therefore, for at least the reason set forth above, the rejection made under 35 U.S.C. § 103(a) with respect to Claim 30 is proper and therefore, maintained.

In the Appeal Brief, Appellant argues:

e) Also, regarding Appellant's dependent claim 31, the combination of Abdelilah and Kaler at least fail to disclose, for example, "wherein utilizing the recording module of the modem comprises executing a recording application program on the computer." The Final Office Action states the following:

...

However, as shown above, Abdelilah's disclosure of FIFO buffers 355, 360 implemented in DSP memory 345 **of modem 310** clearly fails to teach a recording application program **on the computer (i.e., the second device)**. Nowhere in Abdelilah is there any disclosure of a recording application program on Abdelilah's remote device communicating with Abdelilah's host 300 over PSTN and via server modem (not shown) and modem 310. Kaler fails to remedy the deficiencies of Abdelilah. As such, the combination of Abdelilah and Kaler clearly fails to disclose, for example, at least "wherein utilizing the recording module of the modem comprises executing a recording application program on the computer," as recited in Appellant's dependent claim 31.

(See Appeal Brief – page 29 to page 30, emphasis in original.)

Examiner's response:

e) Examiner disagrees. With respect to the Appellant's assertion that the combination of Abdelilah and Kaler at least fail to disclose, for example, "wherein utilizing the recording module of the modem comprises executing a recording application program on the computer," the Examiner respectfully submits that Abdelilah clearly discloses **"wherein utilizing the recording module of the modem comprises executing a recording application program on the computer"** *(see Column 8: 3-7, "... references to the DSP memory 345 associated with the DSP 340 [recording application program] refer to the memory or memories within the modem 310 which are utilized for data storage by the DSP 340 during communication operations of the modem 310 supporting an active connection.")*. Note that as discussed in the Examiner's response (II)(d) hereinabove, Abdelilah's invention provides an external modem, for example,

the remote device's server modem, which can be used to record the communication operations of the modem arriving from the host system and the remote device. Thus, one of ordinary skill in the art would readily comprehend that the remote device's server modem is functionally equivalent to the host system's modem and can be used to store modem data as well.

Therefore, for at least the reason set forth above, the rejection made under 35 U.S.C. § 103(a) with respect to Claim 31 is proper and therefore, maintained.

In the Appeal Brief, Appellant argues:

f) Further, regarding Appellant's dependent claim 32, the combination of Abdelilah and Kaler at least fails to disclose, for example, "the first device is a personal computer; and utilizing the recording module to **fully record the input information input to at least the first and/or second inputs of the modem** comprises utilizing the recording module to **fully record the input information** comprising: data input to the first input from the personal computer; commands input to a command input of the modem from the personal computer; and samples input to the second input from the second device through the communication network." The Final Office Action states the following:

…

However, Abdelilah's mere disclosure of recording state transitions and obtaining data related to the performance of the modem 310 does not teach **fully recording the input information input to at least the first and/or second inputs of the modem**. Nowhere in Abdelilah is there any disclosure that all of the information arriving over primary path 315 and through port 320 is recorded. Further, Abdelilah's mere disclosure of being capable of obtaining call setup codes

does not teach recording all of the commands input to a command input of the modem (i.e., fully recording). Kaler fails to remedy the deficiencies of Abdelilah. As such, the combination of Abdelilah and Kaler cannot teach "the first device is a personal computer; and utilizing the recording module to **fully record the input information input to at least the first and/or second inputs of the modem** comprises utilizing the recording module to fully record the input information comprising: data input to the first input from the personal computer; commands input to a command input of the modem from the personal computer; and samples input to the second input from the second device through the communication network," as recited in Appellant's dependent claim 32.

(See Appeal Brief – page 30 to page 31, emphasis in original.)

Examiner's response:

f) Examiner disagrees. With respect to the Appellant's assertion that the combination of Abdelilah and Kaler at least fails to disclose, for example, "the first device is a personal computer; and utilizing the recording module to fully record the input information input to at least the first and/or second inputs of the modem comprises utilizing the recording module to fully record the input information comprising: data input to the first input from the personal computer; commands input to a command input of the modem from the personal computer; and samples input to the second input from the second device through the communication network," the Examiner respectfully submits that the Examiner has addressed the Appellant's arguments in the Examiner's responses (I)(a) and (I)(b) hereinabove.

Therefore, for at least the reason set forth above, the rejection made under 35 U.S.C. § 103(a) with respect to Claim 32 is proper and therefore, maintained.

In the Appeal Brief, Appellant argues:

g) Additionally, regarding Appellant's dependent claims 35 and 44, the combination of Abdelilah and Kaler at least fail to disclose, for example, "wherein the model of the modem comprises a software component that is the same as a software component of the modem being modeled." The Final Office Action acknowledges that Abdelilah fails to teach the Appellant's claim limitations; however, the final Office Action alleges that Kaler's disclosure at Figure 14 and Column 33, Lines 15-20 remedy the deficiencies of Abdelilah. However, the cited section of Kaler merely discloses user interface features of Kaler's animated application model, which is not a software component that is the same as a software component of the modem being modeled. Put another way, the software component of the modem would not have the user interface features described in the cited section describing Kaler's animated application model. Nowhere in the combination of Abdelilah and Kaler is there any disclosure of a software component that is the same as a software component of the modem being modeled. As such, the combination of Abdelilah and Kaler cannot teach "wherein the model of the modem comprises a software component that is the same as a software component of the modem being modeled," as set forth in Appellant's dependent claims 35 and 44.

(See Appeal Brief – page 32.)

Examiner's response:

g) Examiner disagrees. With respect to the Appellant's assertion that the combination of Abdelilah and Kaler at least fail to disclose, for example, "wherein the model of the modem comprises a software component that is the same as a software component of the modem being modeled," the Examiner respectfully submits that the combination of Abdelilah and Kaler clearly discloses "wherein the model of the modem comprises a software component that is the same as a software component of the modem being modeled." Abdelilah discloses **a modem** *(see Figure 3: 310)*. However, Abdelilah does not explicitly disclose that **the model of the modem comprises a software component that is the same as a software component of the modem being modeled**. Kaler discloses **a model of an application comprises a software component that is the same as a software component of the application being modeled** *(see Figure 13; Column 32: 28-34, "FIG. 13 illustrates a screen print of an animated application model [model of an application] which the present invention generates to show the structure and activity of an application whose performance is being studied. An important innovation in the VSA's analysis function is its ability to dynamically generate diagrams of the functionally active structure of the application.")*. Note that Kaler discloses that the animated application model shows the structure and activity of an application whose performance is being studied. Those of ordinary skill in the art would readily comprehend that the animated application model is the same as the application being modeled. Thus, in view of the teaching of Kaler, one of ordinary skill in the art would be motivated to implement a model for Abdelilah's modem containing software components of the modem because Kaler's invention has utility in analyzing the performance of computer hardware *(see Kaler – Column 3: 58-65)*. The modification would be obvious because one of ordinary skill in the art would be motivated to observe and isolate undesirable modem performance and

behavior during non-real-time playback of the software model of the modem *(see Kaler – Column 1: 33-36)*.

Therefore, for at least the reason set forth above, the rejections made under 35 U.S.C. § 103(a) with respect to Claims 35 and 44 are proper and therefore, maintained.

In the Appeal Brief, Appellant argues:

h) Also, regarding Appellant's dependent claim 36, the combination of Abdelilah and Kaler at least fails to disclose, for example, "wherein: **the model of the modem comprises a hardware component that is the same as a hardware component of the modem; and executing the model of the modem comprises utilizing the hardware component**." The Final Office Action states the following:

…

However, the Final Office Action seems to be confusing analyzing the performance of computer hardware with "wherein: **the model of the modem comprises a hardware component that is the same as a hardware component of the modem**; and executing the model of the modem comprises **utilizing the hardware component**." The Appellant notes that nowhere in the combination of Abdelilah and Kaler is there any disclosure that Kaler's Animated Application Model comprises a hardware component that is the same as a hardware component of the modem and that the execution of the Animated Application Model comprises utilizing the hardware component. Kaler fails to remedy the deficiencies of Abdelilah. As such, the combination of Abdelilah and Kaler cannot teach "wherein: **the model of the modem comprises a hardware component that is the same as a hardware component of the modem**; and executing the

model of the modem comprises **utilizing the hardware component**," as recited in Appellant's dependent claim 36.

(See Appeal Brief – page 32 to page 34, emphasis in original.)

Examiner's response:

h) Examiner disagrees. With respect to the Appellant's assertion that the combination of Abdelilah and Kaler at least fails to disclose, for example, "wherein: the model of the modem comprises a hardware component that is the same as a hardware component of the modem; and executing the model of the modem comprises utilizing the hardware component," the Examiner respectfully submits that the combination of Abdelilah and Kaler clearly discloses "wherein: the model of the modem comprises a hardware component that is the same as a hardware component of the modem; and executing the model of the modem comprises utilizing the hardware component." Abdelilah discloses **a modem** *(see Figure 3: 310)*. However, Abdelilah does not explicitly disclose that **the model of the modem comprises a hardware component that is the same as a hardware component of the modem; and executing the model of the modem comprises utilizing the hardware component**. Kaler discloses **a model of an application comprises a software component that is the same as a software component of the application** *(see Figure 13; Column 32: 28-34, "FIG. 13 illustrates a screen print of an animated application model [model of an application] which the present invention generates to show the structure and activity of an application whose performance is being studied. An important innovation in the VSA's analysis function is its ability to dynamically generate diagrams of the functionally active structure of the application.")* **and executing the model of**

the application comprises utilizing the software component *(see Column 35: 36-47, "... so that in real time as an application is being analyzed, one block will appear, then another, and then the interconnection between the two blocks. Blocks are dynamically added, removed, and moved, and the interconnections between them are dynamically changed to reflect changing conditions in the execution of the application. The diagram is kept up to date with what is really happening.")*. Note that Kaler discloses that the animated application model shows the structure and activity of an application whose performance is being studied. Those of ordinary skill in the art would readily comprehend that the animated application model is the same as the application being modeled. Thus, in view of the teaching of Kaler, one of ordinary skill in the art would be motivated to implement a model for Abdelilah's modem containing hardware components of the modem because Kaler's invention has utility in analyzing the performance of computer hardware *(see Kaler – Column 3: 58-65)*. The modification would be obvious because one of ordinary skill in the art would be motivated to observe and isolate undesirable modem performance and behavior during non-real-time playback of the software model of the modem *(see Kaler – Column 1: 33-36)*.

Therefore, for at least the reason set forth above, the rejection made under 35 U.S.C. § 103(a) with respect to Claim 36 is proper and therefore, maintained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the Examiner in the Related Appeals and Interferences section of this Examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Qing Chen

/Q. C./

Examiner, Art Unit 2191

Conferees:

/Wei Y Zhen/

Supervisory Patent Examiner, Art Unit 2191

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